

WHAT IS CLAIMED IS:

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1. A production apparatus of a fluoride crystal having a crucible divided in a plurality to have multi-stages, to be used for refining a material in a process for refining the material by adding a scavenger in the material.

2. The production apparatus of a fluoride crystal according to claim 1, wherein a degassing hole is provided on a side wall portion of the crucible.

3. A crucible having at least two degassing holes on a side wall portion.

4. A crucible having a connecting hole in the bottom center portion, and at least two degassing holes on a side wall portion.

5. The crucible according to claim 3 or 4, wherein the degassing holes have a diameter of 1 to 5 mm.

A 6. The crucible according to claim ^{4,} ~~4~~ or 5, wherein the connecting hole has a diameter of 1 to 5 mm.

A 7. The crucible according to ^{claim 4,} ~~any of claims 4 to 6,~~ wherein the area of the degassing holes is smaller than the area of the connecting hole.

A 8. The crucible according to ^{claim 3 or 4,} ~~any of claims 3 to 7,~~ wherein the degassing holes are point symmetric with respect to the central axis of the crucible.

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9. The crucible according to ^{claim 3 or 4,} ~~any of claims 3 to 8,~~
having a cylindrical shape with the bottom face.

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10. The crucible according to ^{claim 3 or 4,} ~~any of claims 3 to 9,~~
having a 250 mm or more inner diameter.

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11. The crucible according to ^{claim 3 or 4,} ~~any of claims 3 to 10,~~
having a region for mounting a material.

12. A multi-stage crucible having a region obtained
by superimposing a plurality of the crucibles according
to claim 3 or 4 as the region for mounting a material,
and having a crucible without a connecting hole at the
lowermost stage.

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13. A crystal production method for producing a
calcium fluoride crystal using the crucible according to
claim 11 ~~or 12.~~

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14. A crystal production apparatus having the
crucible according to ^{claim 3 or 4,} ~~any of claims 3 to 11.~~

15. A crystal production apparatus having the multi-
stage crucible according to claim 12.

16. A crucible having a plurality of the crucibles
superimposed in multi-stages via a gap for a gas passage.

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B2
C2

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D2
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